



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/587,525

09/08/2006

Albertus Alard Dijk

4662-228

9517

23117

7590

06/04/2010

NIXON & VANDERHYE, PC  
901 NORTH GLEBE ROAD, 11TH FLOOR  
ARLINGTON, VA 22203

EXAMINER

BADR, HAMID R

ART UNIT

PAPER NUMBER

1781

MAIL DATE

DELIVERY MODE

06/04/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/587,525	<b>Applicant(s)</b> DIJK ET AL.	
	<b>Examiner</b> HAMID R. BADR	<b>Art Unit</b> 1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicants' amendment filed 2/24/2010 is acknowledged.

Claims 1-9 have been cancelled per these amendments.

Claims 10-27 are being considered on the merits.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 10 is indefinite for "providing". It is not clear whether a cheese is provided or manufactured.

4. Claim 10 is indefinite for "a more matured taste". This is relative term. This term is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

5. Claims 10, 14 and 18 are indefinite for "comprising adding a carboxypeptidase preparation". It is unclear whether this preparation contains carboxypeptidase CPD-1 specifically, or any carboxypeptidase.

6. Claims 11-12, 15-16, and 19-20 are indefinite for "carboxypeptidase activity". it is not clear whether this activity is by carboxypeptidase CPD-1 or any carboxypeptidase.

Art Unit: 1781

7. Claim 14 is indefinite for “increasing the flavor intensity”. This is relative term.

This term is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 10-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yvon et al. (US 6,586,025; hereinafter R1) in view of Delest et al. (US 6,875,456, hereinafter R2).

2. R 1 discloses a process for enhancing the flavor of a cheese or cheese flavored food. The process comprises a maturing ( ripening, aging) step in the presence of lactic acid bacteria and a preparation additive comprising at least one keto acid (Abstract).

3. R1 discloses that the enhancement of the flavor results from the increase in the catabolism of the amino acids by the lactic acid bacteria (Col. 2, lines 55-62).

4. R 1 teaches of a preparation additive consisting of alpha-ketoglutarate and other keto acids which are direct precursors of flavor compounds such as ketoisocaproate, ketoisovalerate, and phenylpyruvate (Col. 3, lines 11-16).

Art Unit: 1781

5. R1 discloses that the direct addition of the keto acid could be carried out by adding the keto acid to the base at the maturation stage. The indirect addition may be effectuated by addition of a *Lactococcus* or another lactic acid bacterium strain capable of producing  $\alpha$ -ketoglutarate from glutamate in cheeses (Col. 3, line 54 to Col. 4, line 4).

6. R1 discloses the effect of alpha-ketoglutarate on the degradation of aromatic amino acids such as tyrosine, phenylalanine, tryptophan and the non-aromatic amino acid leucine. Table 1 depicts these results indicating that percent degradation of amino acids increase in the presence of ketoglutarate. The principle metabolites detected are the keto acids corresponding to each amino acid, as well as their degradation products (Col. 5, Table 1 and lines 28-30). Given that  $\alpha$ -ketoglutarate will increase the rate of aromatic amino acids degradation, presence of such aromatic amino acids for the production of flavor is required.

7. While R1 teaches the effect of the keto acids on the cheese flavor enhancement, R1 is silent regarding the how to increase the concentration of aromatic amino acids such as phenylalanine, tyrosine and tryptophan.

8. R2 discloses the hydrolysis of protein substrate using an enzymatic hydrolysis by an endoprotease and exoprotease. (col. 4, lines 20-22).

9. R2 teaches of the purity of the proteases used in the hydrolysis reactions for generating certain amino acids. R2 further discloses that the protease should be at least 95% pure. (col. 7, lines 1-8)

10. Given the requirement for protease purity, the ratios of endoprotease to exoprotease activity (indicating the purity) as presently claimed would be obvious.

Art Unit: 1781

11. R2 discloses the preferred selective carboxypeptidases which have a preference for cleaving adjacent to certain amino acids including CPD-1 from *Aspergillus niger*.

(col. 8, lines 1-5)

12. R2 discloses the preferred combination of proteases including chymotrypsin with CPD-1 in order to release the aromatic amino acids tyrosine, phenylalanine or tryptophan. (col. 8, lines 27-28).

13. It is noted that in cheese making, the endoprotease added is the coagulant in the form of rennin or rennet. Addition of starter cultures will also contribute to the endoprotease activity. Therefore, adding an exoprotease such as CPD-1, as presently claimed, to the cheese milk, or at the salting stage or to the cheese paste would be obvious in light of the teachings of R2. This will cause an increase in the concentration of the aromatic amino acids such as phenylalanine, tyrosine, and tryptophan which will produce the flavor precursors.

14. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to realize the importance of aromatic amino acids as disclosed by R1 and increase the concentration of such amino acids implementing the teachings of R2. One would do so to enhance the cheese flavor or accelerate the ripening of cheese. Absent any evidence to contrary and based on the teachings of the cited references, there would be a reasonable expectation of success in enhancing the cheese flavor.

***Response to Arguments***

Applicants' arguments have been thoroughly reviewed. These arguments are moot in light of the new ground(s) of rejection set forth in this Office action.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action. .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

Art Unit: 1781

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R. Badr  
Examiner  
Art Unit 1781

/Keith D. Hendricks/

Supervisory Patent Examiner, Art Unit 1781